

Appl. No. 10/791,695
Supplemental Paper dated July 19, 2007
Reply to Office action of July 5, 2007

MARKED-UP COPY OF AMENDMENTS IN NEW CLAIMS

37. A blancher for heating a plurality of food products at the same time comprising:

- [a)] a perforate food product receiving chamber that has a food product inlet, a food product outlet, and a plurality of food products received therein;
- [b)] a food product transport mechanism received in the food product receiving chamber that rotates and urges food product in the food product receiving chamber along the food product receiving chamber;
- [c)] a tank that holds a liquid heat transfer medium and which receives the food product receiving chamber;
- [d)] a removable cover overlying the tank;
- [e)] a [header] manifold comprised of a plurality of pairs of spaced apart orifices from which heat transfer medium under pressure is discharged into the food product receiving chamber at a flow rate of at least 20 gallons per minute per foot of length of the [header] manifold;
- [f)] wherein the [header] manifold is 1) oriented in a lengthwise direction relative to the food product receiving chamber with its orifices directing flow of liquid heat transfer medium toward the food product receiving chamber and 2) located outwardly of a lengthwise-extending centerline of the blancher in an exiting quadrant thereof defined from where the rotating food product transport mechanism emerges from the liquid heat transfer medium to adjacent the centerline but not passing to or beyond the centerline.

38. A blancher for heating a plurality of food products at the same time comprising:

- [a)] a perforate food product receiving chamber that has a food product inlet, a food product outlet, and a plurality of food products received therein;
- [b)] a food product transport mechanism received in the food product receiving chamber that rotates and urges food product in the food product receiving chamber along the food product receiving chamber;
- [c)] a tank that holds a liquid heat transfer medium and which receives the food product receiving chamber;
- [d)] a removable cover overlying the tank;

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[e)] a [header] manifold comprised of a plurality of pairs of spaced apart orifices from which a gas is discharged into the food product receiving chamber at a pressure of 2 pounds per square inch;

[f)] wherein the [header] manifold is 1) oriented in a lengthwise direction relative to the food product receiving chamber with its orifices directing flow of gas toward the food product receiving chamber and 2) located outwardly of a lengthwise-extending centerline of the blancher in an exiting quadrant thereof defined from where the rotating food product transport mechanism emerges from the liquid heat transfer medium to adjacent the centerline but not passing to or beyond the centerline.

39. A blancher for heating a plurality of food products at the same time comprising:

[a)] a perforate food product receiving chamber that has a food product inlet, a food product outlet, and a plurality of food products received therein;

[b)] a food product transport mechanism received in the food product receiving chamber that rotates and urges food product in the food product receiving chamber along the food product receiving chamber;

[c)] a tank that holds a liquid heat transfer medium and which receives the food product receiving chamber;

[d)] a removable cover overlying the tank;

[e)] a [header] manifold comprised of a plurality of pairs of spaced apart orifices from which vapor is discharged into the food product receiving chamber at a rate of 20 pounds per hour and a pressure of 15 pounds per square inch;

[f)] wherein the [header] manifold is 1) oriented in a lengthwise direction relative to the food product receiving chamber with its orifices directing flow of vapor toward the food product receiving chamber and 2) located outwardly of a lengthwise-extending centerline of the blancher in an exiting quadrant thereof defined from where the rotating food product transport mechanism emerges from the liquid heat transfer medium to adjacent the centerline but not passing to or beyond the centerline.

40. A blancher for heating a plurality of food products at the same time comprising:

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a food product transport mechanism comprising an auger having a plurality of pairs of axially spaced auger flights;

a tank;

a perforate drum disposed in the tank into which are disposed [the] food products, wherein the food product transport mechanism is disposed in the perforate drum and rotates in a clockwise direction during operation thereby urging food product from adjacent a food product inlet toward a food product outlet;

a first bank of orifices with each of the orifices in fluid flow communication with the tank, wherein i) the first bank of the orifices generally extends in an axial direction relative to the tank and has at least two of the orifices, ii) the first bank of the orifices is disposed between a 6 o'clock position and an 8 o'clock position; and iii) a gas is discharged through each of the orifices of the first bank of the orifices;

a second bank of orifices with each of the orifices in fluid flow communication with the tank, wherein i) the second bank of the orifices generally extends in an axial direction relative to the tank and has at least two of the orifices, ii) the second bank of the orifices is disposed between a 7 o'clock position and a 9 o'clock position; and iii) a liquid heat transfer medium is discharged through each of the orifices of the second bank of the orifices.

41. A blancher for heating a plurality of food products at the same time comprising:

a food product transport mechanism comprising an auger having a plurality of pairs of axially spaced auger flights;

a tank;

a perforate drum disposed in the tank into which are disposed [the] food products, wherein the food product transport mechanism is disposed in the perforate drum and rotates in a clockwise direction during operation thereby urging food product from adjacent a food product inlet toward a food product outlet;

a first bank of orifices with each of the orifices in fluid flow communication with the tank, wherein i) the first bank of the orifices generally extends in an axial direction relative to the tank and has at least two of the orifices, ii) the first bank of the orifices is disposed within about 65° of a centerline that extends perpendicular to horizontal and extends through the center of the

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perforate drum; and iii) a gas is discharged through each of the orifices of the first bank of the orifices;

a second bank of orifices with each of the orifices in fluid flow communication with the tank, wherein i) the second bank of the orifices generally extends in an axial direction relative to the tank and has at least two of the orifices, ii) the second bank of the orifices is disposed within a band that extends between 45° and 85° of the centerline; and iii) a liquid heat transfer medium is discharged through each of the orifices of the second bank of the orifices.

42. A blancher for heating a plurality of food products at the same time comprising:

- a food product transport mechanism comprising an auger having a plurality of pairs of axially spaced auger flights;
- a tank;
- a perforate drum disposed in the tank into which are disposed [the] food products and a heat transfer medium, wherein the food product transport mechanism is disposed in the perforate drum and rotates in a clockwise direction during operation thereby urging food product from adjacent a food product inlet toward a food product outlet;
- a first bank of orifices with each of the orifices in fluid flow communication with the tank, wherein i) the first bank of the orifices generally extends in an axial direction relative to the tank and has at least two of the orifices, and ii) the first bank of the orifices is disposed between a 6 o'clock position and an 8 o'clock position;
- a second bank of orifices with each of the orifices in fluid flow communication with the tank, wherein i) the second bank of the orifices generally extends in an axial direction relative to the tank and has at least two of the orifices, and ii) the second bank of the orifices is disposed between a 7 o'clock position and a 9 o'clock position.

43. A blancher for heating a plurality of food products at the same time comprising:

- a food product transport mechanism comprising an auger having a plurality of pairs of axially spaced auger flights;
- a tank;
- a perforate drum disposed in the tank into which are disposed [the] food products and a heat transfer medium, wherein the food product transport mechanism is disposed in the perforate

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drum and rotates in a clockwise direction during operation thereby urging food product from adjacent a food product inlet toward a food product outlet;

a first bank of orifices with each of the orifices in fluid flow communication with the tank, wherein i) the first bank of the orifices generally extends in an axial direction relative to the tank and has at least two of the orifices, and ii) the first bank of the orifices is disposed within about 65° of a centerline that extends perpendicular to horizontal and extends through the center of the perforate drum;

a second bank of orifices with each of the orifices in fluid flow communication with the tank, wherein i) the second bank of the orifices generally extends in an axial direction relative to the tank and has at least two of the orifices, and in the second bank of the orifices is disposed within a band that extends between 45° and 85° of the centerline.

44. A blancher for heating a plurality of food products at the same time comprising:

a perforate food product receiving chamber having a food product inlet at one end, a food product outlet at its other end, and a plurality of food products [disposed] received therein;

a tank in which the perforate food product receiving chamber is disposed;

a liquid heat transfer medium disposed in the tank;

a food product transport mechanism disposed in the perforate food product receiving chamber and which comprises an auger having a plurality of pairs of axially spaced auger flights;

a plurality of pairs of orifices disposed in fluid flow communication with the heat transfer medium each for discharging a fluid under pressure toward the food products; and

fluid comprising a gas discharged from each of the orifices at a volumetric flow rate of at least 60 CFM for increasing heat transfer to the food products.

45. A blancher for heating a plurality of food products at the same time comprising:

a perforate food product receiving chamber having a food product inlet at one end, a food product outlet at its opposite end, and a plurality of food products [disposed] received therein;

a tank in which the perforate food product receiving chamber is disposed;

a liquid heat transfer medium disposed in the tank;

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a food product transport mechanism that comprises an auger disposed in the perforate food product receiving chamber, the auger having a plurality of pairs of axially spaced auger flights;

there is a plurality of pairs of orifices disposed in fluid flow communication with the liquid heat transfer medium each for discharging a fluid under pressure toward the food products; and

the liquid heat transfer medium is discharged from each of the orifices at a pressure of at least 30 psi for increasing heat transfer to the food products.

46. A blancher for heating a plurality of food products at the same time comprising:
a perforate food product receiving chamber having a food product inlet at or adjacent one end, a food product outlet at or adjacent an opposite end, and a plurality of food products [disposed] received therein;

a tank in which the perforate food product receiving chamber is disposed;
a liquid heat transfer medium disposed in the tank;
a food product transport mechanism that comprises an auger disposed in the perforate food product receiving chamber, the auger having a plurality of pairs of axially spaced auger flights;

there is a plurality of pairs of orifices disposed in fluid flow communication with a heat transfer medium each for discharging a fluid under pressure toward the food products; and
the fluid discharged from each of the orifices is a liquid at a pressure of at least 80 psi.

47. A blancher for heating a plurality of food products at the same time comprising:
a perforate and tubular food product receiving chamber having an inlet, an outlet and a plurality food products [disposed] received therein;
a tank that receives the perforate and tubular food product receiving chamber;
a liquid heat transfer medium disposed in the tank and in the perforate and tubular food product receiving chamber;
a food product transport mechanism that comprises an auger disposed in the perforate and tubular food product receiving chamber, the auger having a plurality of pairs of axially spaced auger flights;

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there is a plurality of pairs of orifices disposed in fluid flow communication with a heat transfer medium each for discharging a fluid under pressure toward the food products; and

the fluid discharged from each of the orifices is a gas at a pressure of at least 2 psi and at a flow rate of at least 100 CFM.